Rehabilitation outcome in tick-borne meningoencephaloradiculomyelitis patients

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Background.– Tick-borne encephalitis is a RNA-viral infection comprising different clinical syndromes with involvement of central or peripheral nervous system, or both. Meningoencephaloradiculomyelitis seems to be the most disabling form of disease, with severe acute clinical course and possible severe long-term activity limitations of patients. Comprehensive rehabilitation is therefore often required. The aim of our study was to assess rehabilitation outcome in these patients.
Methods.– Fifteen patients with meningoencephaloradiculomyelitis, aged 56.1 years on average (SD 10.8, range 27–73 years), were included in the study. Activity was assessed using the functional independence measure (FIM). Assessment was performed at admission and at discharge.
Results.– The rehabilitation lasted for 59.4 days on average (SD 34.6, range 25–123 days). Clinically important and statistically significant improvements in patients' activities were achieved ($P < 0.001$). Moderate and statistically significant correlation was observed between the improvement in patients' activities and duration of rehabilitation ($r = 0.602$, $P = 0.018$). There was no significant correlation between improvement in patients' activities and time from onset of disease to admission to rehabilitation or between improvement in activities and patients' age.
Discussion.– Clinically important and statistically significant improvements regarding activities were achieved in tick-borne meningoencephaloradiculomyelitis patients during relatively short inpatient comprehensive rehabilitation.

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P036-e

Entrapment of The femoral nerve by inguinal lymphadenopathy

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Keywords: Femoral nerve; Entrapment neuropathies; Inguinal lymp node
Background.– Femoral neuropathy caused by compression of the femoral nerve is not a common entrapment neuropathy in the lower extremity. We present a case of femoral entrapment neuropathy due to inguinal lymph node enlargement.
Results.– A 21-year-old male patients presented with a left groin pain and tingling radiating to anterior aspect of the leg for 4 months. The symptoms exacerbated with sitting and squatting. The neurological exam revealed normal patellar deep tendon reflex, sensation loss in anterior femoral region and mild quadriceps muscle weakness (muscle strength grading of 4). Palpation of the left groin in mid-inguinal line revealed a mass and elicited tenderness. Ultrasound scanning of the groin showed a lymph node with a size of 3 × 5 mm compressing the femoral nerve. Pain elicited via compression of the lymph node with the probe was suggestive of a femoral nerve entrapment. Electromyography (EMG) and nerve conduction studies confirmed a neurapraxia of the femoral nerve.
Discussion.– An inguinal lymph node enlargement may lead to femoral entrapment neuropathy. Ultrasound and EMG may be helpful to confirm the diagnosis.

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P037-e

Literature review about anterior interosseous nerve (AIN) syndrome illustrated by two cases

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Keywords: Anterior interosseous nerve syndrome; Pronator quadratus; Electrophysiological conduction velocity measurements
Background.– AIN syndrome is a triad of weakness of the flexor pollicis longus (FPL), the flexor digitarum profundus (FDP) of the index finger and the pronator quadratus (PQ).
Results.– Two men undergo a trauma on upper members. Patient's examination highlights pains associated with a deficit of pronation of the front arm, FPL and FDP II flexion. The electrophysiological conduction velocity measurements (ECVM) fund an infringement of the NIOA and both imaging and surgical explorations are normal.
Discussion.– The AIN is a driving branch of the median nerve. The main aetiology is traumatic by elbow's fracture. The clinical test is an impossibility to make the diver's OK sign. The ECVM may be a trap because there is no differential diagnosis with a median nerve's infringement without testing the PQ. The treatment is medical unless no recovery happens within 6 months; otherwise a surgical exploration with neurolysis is imperative.
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P038-e

Recommended cut-off value for diagnosis of carpal tunnel syndrome using ultrasonography in females

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Keywords: Carpal tunnel syndrome; Ultrasonography; Median nerve
Background.– We compared electromyographic findings with ultrasonographic measurements to determine the cut-off values for female patients to diagnose carpal tunnel syndrome using ultrasonography.
Methods.– Ultrasonography and electromyography were done in 42 female patients suspected of carpal tunnel syndrome. CTS was confirmed via EMG study, and the cross-sectional area (CSA) of proximal and distal median nerves. Cut-off values of measured data were determined via AUC (area under the ROC curve) using receiver operating characteristics (ROC) analysis.
Results.– A total of 84 hands were studied. Fifty-eight hands were diagnosed with CTS using EMG, while 26 showed normal findings. The cut-off values were determined as followed; proximal median nerve CSA $\geq 9.7\ mm^2$ (AUC = 0.792), distal median nerve CSA $\geq 8.7\ mm^2$ (AUC = 0.671), proximal carpal tunnel CSA $\geq 202\ mm^2$ (AUC = 0.621), distal carpal tunnel CSA $\geq 159\ mm^2$ (AUC = 0.597), proximal Nerve/Tunnel Index ≥ 5.1 (AUC = 0.693), and distal Nerve/Tunnel Index ≥ 6.0 (AUC = 0.678).
Discussion.– Based on the results, when the cut-off value of the CSA of the proximal median nerve is $9.7\ mm^2$, the AUC value is highest at 0.792, thus leading to the conclusion that the CSA of the proximal median nerve can be used as a useful cut-off value in diagnosis of CTS using ultrasonography.

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P039-e

The motor function measure to study limitation of activity in children and adults patients with Charcot-Marie-Tooth disease

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Keywords: Charcot-Marie-Tooth disease; Motor function measure; Limitation of activity; Neuromuscular disease; Outcome measures
Objective.– To study validity, applicability and sensitivity to change of the motor function measure (total score and sub-scores D1, D2 and D3) in patients with Charcot-Marie-Tooth disease.
Methods.– Two hundred and thirty-three patients aged 4–86 years were included. The scores and sub-scores were analyzed by age and by disease subtypes. Sensitivity to change was estimated in patients with at least 6 months of follow-up and 2 evaluations.
Results.– Motor function measure scores decrease with age, especially sub-scores D1 and D3. There were no significant differences between the scores in the different types of Charcot-Marie-Tooth disease. The scores were significantly higher for ambulant patients than for non ambulant. A significant sensitivity to change was demonstrated only in Charcot-Marie-Tooth disease type 2.
Discussion.– Our results suggest that the motor function measure, especially D1 and D3 sub-scores, is a reliable and valid outcome measure usable for patients' follow-up but also in clinical trials to assess efficacy of treatment. Longer follow-up could demonstrate sensitivity to change in other Charcot-Marie-Tooth disease subtypes.

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P040-e

Isolated axillary nerve neuropathy. Case report

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Keywords: Axillary; Neuropathy; Rehabilitation
Background.– The axillary nerve dysfunction is a form of peripheral neuropathy. It occurs when the nerve is damaged, which supplies the deltoid muscle and skin around. Symptoms include pain, numbness in the outer portion of the shoulder, and weakness specially in the abduction movement. Aetiology can be traumatic, systemic or idiopathic. Pharmacologic treatment of pain and rehabilitation are helpful in the management of the process.
Results.– A 44-year-old man presented with acute pain and difficult to abduct his left shoulder, no traumatic or systemic cause was recorded. Amyotrophy of the shoulder girdle appeared in later physical examination. Ecography showed minimal signs of supraespinatus tendinitis. Electromyography (EMG) carried out 2 months later revealed isolated axillary nerve involvement. Rehabilitation treatment was implemented, which included neurostimulation and therapeutic exercise to improve muscular strength of shoulder abductors. Six months later, recovery was nearly complete, remaining minimal atrophy of the deltoids muscle.
Discussion.– Isolated axillary nerve involvement is a rare presentation of neuralgic amyotrophy.
Clinical presentation and EMG make the diagnosis. Analgesic and rehabilitation are the recommended treatment.

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P041-e

Frequency of carpal tunnel syndrome in patients with cervical radiculopathy

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Keywords: Carpal tunnel syndrome; Cervical radiculopathy; EMNG
Background.– Carpal tunnel syndrome (CTS) and cervical radiculopathy (CR) are the most common cause of symptoms of sensorimotor dysfunction of the upper extremities. These conditions are often difficult to distinguish, and often occur simultaneously.
Objective.– To determine the frequency of CTS in patients with electrodiagnostic findings (EMG) of CR, as well as the correlation between the frequency of CTS and the level of CR.
Methods.– We analyzed medical records of 69 patients with EMG confirmed CR. EMG examination consisted of median and ulnar motor and sensory conduction velocity studies, and electromyographic examination of muscles representing C6, C7 and C8 myotome.
Results.– In 68.1% of patients isolated CR was diagnosed, and 31.9% of patients were diagnosed with the simultaneous presence and CTS and CR. Frequency of the cervical root involvement was: C7 (59.42%), C6 (30.4), and C8 (10.2%). Frequency of CTS in radiculopathies C6, C7 and C8 was 15.5%, 16.4% and 21.7%, with no statistically significant differences.
Discussion.– CR is often associated with CTS, with no correlation between the frequency of CTS and the level of radiculopathy. Different approach to the treatment of these conditions requires precise diagnosis, which can be achieved by referring patients to electrodiagnostic examination.

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P042-e

Treatment of co-contractions and muscle hypertonia of children with obstetric brachial plexus palsy (0BPP): Botulinum toxin. Twenty-five cases report

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Keywords: Obstetric brachial plexus palsy; Treatment; Botulinum toxin
Background.– Depending on the plexus injury, two types of after-effects can occur. Co-contractions, resulting from a new organization of nerve fibers and muscle hypertonia. We will show the results of our treatment using botulinum toxin for these two types of after-effects. Use of botulinum toxin has been known since 2000, but currently study methods do not allow us to formally exploit results.
Methods.– We injected botulinum toxin in 25 patients showing co-contraction between the brachial biceps and the triceps and hypertonic of the latissimus dorsi muscle.
Discussion.– Only a joint work between surgeons, neurologists and rehabilitation doctors will enable to work out a more effective treatment and limit the functional after-effects of these patients.
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